

Claims:

1. An attention detection system comprising:
 - at least one first sensor device for generating a signal relating to a host wearer from a host perspective and relating to attention clue signals; and
 - at least one second sensor device for generating a signal relating to the host wearer from an observer perspective and relating to said attention clue signals;
 - a portable attention detector for receiving the host perspective and the perspective attention clue signals and for determining a situation of raised attention of said host wearer from said host perspective attention clues and said received observer perspective attention clues.
2. The attention detection system as claimed in claim 1, further comprising:
 - an image capture device for capturing an image from the self-perspective of said host wearer in response to a determined situation of raised attention.
3. The system as claimed in claim 1, wherein said at least one first sensor device is adapted to be worn by said host wearer.
4. The system as claimed in claim 1, wherein said at least one second sensor device is adapted to be worn by a wearer other than the host wearer.
5. The system as claimed in claim 1, wherein said at least one second sensor device is adapted to be located in a place where said host user is likely to be.
6. The system as claimed in claim 1, further comprising a people-observing device for communicating with said attention detector.

7. The system as claimed in claim 6, further comprising a plurality of the people-observing devices, which are capable of:
communicating with said attention detector; and
communicating with each other.
8. The system as claimed in claim 6, further comprising at least one camera device.
9. The system as claimed in claim 1 further comprising first and second user-observing devices adapted for using beacons to locate and detect each other.
10. The system as claimed in claim 1 wherein the portable attention detector and the at least one first sensor device is integrated into a host wearable device.
11. The system as claimed in claim 1, further comprising a people-observing device for communicating with said attention detector, wherein said people-observing device is configurable for cooperating with at least one other people-observing device for communicating information with said at least one other people-observing device.
12. The system as claimed in claim 1, further comprising a people-observing device for communicating with said attention detection module, wherein said people-observing device is configurable for recognizing at least one other people-observing device to form a group of people-observing devices capable of recognizing each other.
13. The system as claimed in claim 12, wherein said people-observing device can be set to communicate or not communicate with at least one other people-observing device based on an analysis of contextual information relating to the host user.

14. The system as claimed in claim 1, further comprising a people-observing device that can be set to communicate or not communicate with at least one other people-observing device based on an analysis of a type of attention clue detected.
15. The system as claimed in claim 1, further comprising at least one people-observing device that can be set to communicate or not communicate with at least one said attention detector depending upon the type of attention clue detected.
16. The system as claimed in claim 1, further comprising a digital camera device for capturing a digital image.
17. The system as claimed in claim 1, wherein the at least one second sensor device is arranged for detecting a facial expression of said host wearer.
18. The system as claimed in claim 1, wherein the at least one second sensor device is arranged for detecting an eye direction of said host wearer.
19. The system as claimed in claim 1, wherein the at least one second sensor device is arranged for detecting body language of said host wearer.
20. The system as claimed in claim 1, further comprising a detector for body posture of the host wearer.
21. The system as claimed in claim 1 further comprising a detector for the context of an environment where said host wearer is located.
22. The system as claimed in claim 1 further comprising a vocal utterance detector of the host wearer.

23. A method of capturing images using at least one camera device, said method comprising:

detecting an attention clue exhibited by at least one first animate object from the perspective of a host second animate object carrying said at least one camera device, said attention clue indicating that the attention of the first animate object is drawn by a subject;

detecting an attention clue of said second animate object from an observer perspective external of said second animate object;

activating said at least one camera device for capturing an image of said subject in response to detection of said attention clues of the first and second animate objects.

24. The method as claimed in claim in claim 23, wherein said step of detecting an attention clue exhibited by the at least one animate object comprises detecting a facial expression of said at least one first animate object.

25. The method as claimed in claim in claim 23, wherein said step of detecting an attention clue exhibited by the at least one animate object comprises detecting an eye direction of said at least one first animate object.

26. The method as claimed in claim in claim 23, wherein said step of detecting an attention clue exhibited by the at least one animate object comprises detecting of said at least one first animate object.

27. The method as claimed in claim in claim 23, wherein said step of detecting an attention clue exhibited by the at least one animate object comprises detecting body posture of said at least one first animate object

28. The method as claimed in claim in claim 23, wherein said step of detecting an attention clue exhibited by the at least one animate object comprises detecting a vocal utterance of said at least one first animate object.

29. The method as claimed in claim 23, wherein the detecting step for the attention clue of said second animate object comprises:
- capturing an image; and
 - performing image processing of said image to detect an attention clue of said second animate object selected from the set including:
 - a facial expression;
 - an eye direction;
 - a body movement; and
 - a body posture.
30. A method of automatically capturing an image, said method comprising;
- detecting at least one attention signal in response to a detectable body parameter of at least one animate object;
 - analyzing said at least one attention signal to determine an interest level of said at least one animate object; and
 - capturing said image in response to said interest level.
31. The method as claimed in claim 30 further comprising;
- determining a situational saliency of a scene by analyzing said at least one attention signal.
32. The method as claimed in claim 31, wherein said analysis is performed in a mode of self perspective of said animate object.
33. A method as claimed in claim 31, wherein said analysis is performed in a mode of an observer perspective of said at least one animate object.
34. An image capture device comprising:
- an image detector device for capturing an image;

an attention detection component for determining an attention signal of a person from a self perspective;

a transponder device for receiving activation signals from a remote source;

said attention detection component being configured for identifying said activation signals, and activating capture of an image in response to said self perspective activation signal and said received activation signal.

35. A device for observing at least one first animate object, comprising:
an interface for interfacing with at least one sensor device; and

a receiver for a sensor signal representing aspects of body language of the first animate object, the aspects being observed from a position external of said first animate object; and

an analyzer for determining from said sensor signal at least one attention clue related to a second animate object observing the first animate object; and a transmitter for transmitting the attention clue signals.

36. The device as claimed in claim 35, further comprising:
a transponder device for transmitting said sensor signals.

37. The device as claimed in claim 35, further comprising:
an image capture device for capturing image frames.

38. An attention detection component for determining a level of attention of at least one animate object, said component comprising:

an analyzer for (a) at least one attention clue signal, and (b) determining from said attention clue signal, a level of interest of said at least one animate object.

39. The attention detection component as claimed in claim 38, operable for:

analyzing said attention clues in a self perspective mode, in which said attention clues relate to a single host animate object.

40. The attention detection component as claimed in claim 38, the component being operable in an observer perspective mode, in which said attention clues represent signals describing behavior of an animate object observed from a remote location.

41. The attention detection component as claimed in claim 38, comprising a transponder device for receiving said attention clue signals from a remote sender device.

42. Computer program article of manufacture for causing a computer to perform steps comprising:

analyzing a plurality of sensor signals representing attention clues collected from a self perspective of a first animate object, and attention clues collected from an observed perspective of said first animate object, and determining from said sensor signals, a behavioral mode of the first animate object; and

generating an image capture trigger signal for triggering an image capture device to capture image data, in response to a said sensed behavioral mode of said first animate object.

43. An attention detection system comprising:

a portable attention detector for receiving attention clues generated from a self perspective of a host wearer of said attention detector;

an animate object observing device for observing said host wearer from an observer perspective external of said host wearer and determining attention clues of said host wearer from said observer perspective externally of said host wearer;

said attention detector being capable of determining a situation of raised attention of said host wearer from said self perspective attention clues, and said received observer perspective attention clues.

44. A system for detecting the attention level of a first animate object comprising:

a first sensor for generating a first signal relating to the attention level of the first animate object from the perspective of the first animate object;

a second sensor for generating a second signal relating to the first animate object from a perspective other than the first animate object; and

a processor for determining that the first animate object has a raised attention level in response to the first and second signals.

45. The system of claim 44 wherein the second sensor is arranged to respond to a parameter indicative of the attention being paid to the first animate object by a second animate object.

46. The system of claim 45 wherein the first and second sensors are adapted to be carried by the first animate object.

47. The system of claim 46 wherein the second sensor comprises an image detector adapted to be responsive to at least a portion of an image of the second animate object.

48. The system of claim 45 wherein the first and second sensors are respectively adapted to be carried by the first and second animate objects.

49. The system of claim 48 wherein the second sensor is connected to a

transmitter (a) adapted to be carried by the second animate object, and (b) arranged to transmit the second signal from the second animate object to the first animate object.

50. The system of claim 44 wherein the second sensor is arranged to respond to a parameter indicative of the reaction of the first animate object to the environment where the first animate object is located.

51. The system of claim 50 wherein the second sensor is adapted to be located at a position removed from the first animate object, and further comprising a transmitter arranged to transmit the second signal from said position to a receiver (a) arranged to receive the second signal, and (b) adapted to be carried by the first animate object.

52. A method of detecting the attention level of a first animate object comprising:

sensing the attention level of the first animate object from the perspective of the first animate object;

generating a signal relating to the first animate object from a perspective other than the first animate object; and

determining that the first animate object has a raised attention level in response to the sensed attention level and the signal.

53. The method of claim 52 wherein the signal is generated in response

to a parameter indicative of the attention being paid to the first animate object by a second animate object.

54. The method of claim 53 wherein the sensor is carried by the first animate object.

55. The method of claim 54 wherein the sensor comprises an image detector responsive to at least a portion of an image of the second animate object.

56. The method of claim 53 wherein the first and second sensors are respectively carried by the first and second animate objects.

57. The method of claim 56 further comprising transmitting the second signal from the second animate object to the first animate object.

58. The method of claim 52 wherein the second sensor responds to a parameter indicative of the reaction of the first animate object to the environment where the first animate object is located.

59. The method of claim 58 wherein the second sensor is located at a position removed from the first animate object, and further comprising transmitting the second signal from said position to a receiver that receives the second signal and is carried by the first animate object.